

## Structural studies of glass by nuclear magnetic resonance

### Synopsis:

Glasses are characterized by the absence of long range order in their structure and consequently, the determination of a glass structure is not an easy task. The lack of long range order affects, to a large extent, the physical properties of these materials. Unlike crystalline materials, determination of the position of an atom is not of primary interest because the whole structure cannot be expressed as a multiple unit of cell. The glass structure can be described in terms of the local three dimensional configurations around a species termed the network former. The main effort has been directed towards a compilation of some experimental information about the structure by using nuclear magnetic resonance (NMR) spectroscopy. Glasses discussed in this book are based on germania, sodium germanate, and cadmium alumino-phosphate, and also their crystalline phases produced from those glasses. In order to arrive at a comprehensive picture of the structure of glasses, this book also describes the general idea about glasses and to show how the NMR spectroscopy can be used to probe their structures.

This book is therefore intended to be a useful reference work for postgraduate students and research workers alike on glass or materials science.